

C Zhan, E Fedorov, W Shi, U Ramagopal, R Thirumuruhan, B Manjasetty, S Almo, A Fiser, M Chance, A Fedorov. The ybeY Protein from Escherichia coli is a Metalloprotein. *Acta Cryst. F.* **61** (11), 959-963 (2005).

## NLSL Staff

- J Ablett. High-Brightness Hard X-ray Scanning Nano-Probes at NLSL II. *Nucl. Instrum. Meth. B.* **241**, 238-241 (2005).
- T Beetz, M Howells, C Kao, J Kirz, E Lima, T Mentes, H Miao, C Sanchez-Hanke, D Sayre, D Shapiro. Apparatus for X-ray Diffraction Microscopy and Tomography of Cryo Specimens. *Nucl. Instrum. Meth. A.* **545** (1-2), 459-468 (2005).
- J Bengtsson. Control of Dynamic Aperture for Synchrotron Light Sources. *Proceedings of the 2005 Particle Accelerator Conference, Knoxville Tennessee*, Vol , p. 1670-1672, sponsored by IEEE. (2005).
- R Bindu, S Pandey, A Kumar, S Khalid, A Pimpale. Local Distortion of MnO<sub>6</sub> Octahedron in La<sub>1-x</sub>Sr<sub>x</sub>MnO<sub>3+Δ</sub> (X=0.1-0.9): An Exafs Study. *J. Phys.: Condens. Matter.* **17** (41), 6393-6404 (2005).
- A Blednykh, S Krinsky, B Podobedov, J Rose, N Towne. Harmonic Cavity Performance for NLSL-II. *Particle Accelerator 2005*, p. 2544-2546, (2005).
- Y Cai, H Mao, P Chow, J Tse, Y Ma, S Patchkovskii, J Shu, V Struzhkin, R Hemley, et al.. Ordering of Hydrogen Bonds in High-Pressure Low-Temperature H<sub>2</sub>O. *Phys. Rev. Lett.* **94**, 025502 (2005).
- A Cavaliere, D Fritz, S Lee, P Bucksbaum, D Reis, J Rudati, D Mills, P Fuoss, G Stephenson, et al.. Clocking Femtosecond X-rays. *Phys. Rev. Lett.* **94**, 114801 (2005).
- S Chakraborty, B Sahoo, I Teraoka, L Miller, R Gross. Enzyme-Catalyzed Regioselective Modification of Starch Nanoparticles. *Macromolecules.* **38** (1), 61-68 (2005).
- K Chalut, V Litvinenko, I Pinayev, S Khalid, A Pimpale. Method of Phase-Space Tomography of Rapidly Evolving E Beams. *Phys. Rev. ST AB.* **8** (10), 102802 (2005).
- O Chmaissem, B Dabrowski, S Kolesnik, J Mais, J Jorgenson, S Short, C Botez, P Stephens. Effects of A-Site Ordering on the Structures and Properties of La<sub>1-x</sub>Ba<sub>x</sub>MnO<sub>3</sub>(X~0.5). *Phys. Rev. B.* **72**, 104426 (2005).
- M Croft, Z Zhong, N Jisrawi, I Zakharchenko, R Holtz, Y Gulak, J Skaritka, T Fast, K Sadananda, T Tsakalakos. Strain Profiling of Fatigue Crack Overload Effects Using Energy Dispersive X-Ray Diffraction. *Int. J. Fatigue.* **27**, 1408-1419 (2005).
- C Foerster, J Hu, E Haas. Results of Vacuum Pump Oil Testing to Minimize Oil Waste at the NLSL. *American Vacuum Society Symposium*, Vol , p. 1, sponsored by NLSL. (2005).
- D Fong, C Cionca, Y Yacoby, G Stephenson, J Eastman, P Fuoss, S Streiffer, C Thompson, R Clarke, et al.. Direct Structural Determination in Ultrathin Ferroelectric Films by Analysis of Synchrotron X-ray Scattering Measurements. *Phys. Rev. B.* **71**, 144112 (2005).
- K Gaffney, A Lindenberg, J Larsson, K Sokolowski-Tinten, C Blome, O Synnergren, J Sheppard, C Coleman, A MacPhee, et al.. Observation of Structural Anisotropy and the Onset of Liquidlike Motion During the Nonothermal Melting of InSb. *Phys. Rev. Lett.* **95**, 125701 (2005).
- A Ganjoo, H Jain, S Khalid, C Pantano. Structural Modification of Ge-Se Amorphous Films with the Addition of Sb. *Philos. Mag. Lett.* **85** (10), 503-512 (2005).
- P Glans, T Learmonth, K Smith, T Valla, P Johnson, S Hulbert, W McCarroll, M Greenblatt. Charge-Density-Wave Gap in the Quasi-Two-Dimensional Conductor Na<sub>0.9</sub>Mo<sub>6</sub>O<sub>17</sub> Measured by Angle-Resolved Photoemission Spectroscopy. *Phys. Rev. B.* **72**, 035115 (2005).
- Y Guan, Z Dios, D Arena, L Cheng, W Bailey. Transmission-Mode X-ray Magnetic Circular Dichroism Characterization of Moment Alignment in Tb-Doped Ni<sub>81</sub>Fe<sub>19</sub>. *J. Appl. Phys.* **97**, 10A719 (2005).
- E Haas, R Scheuerer, E Losee. Vortex Tube Machining Improves Safety While Reducing Environmental Waste. *Mod. Mach. Shop.* **78** (4), 54 (2005).
- M Hasnah, C Parham, E Pisano, Z Zhong, O Oltulu, D Chapman. Mass Density Images from the Diffraction Enhanced Imaging Technique. *Med. Phys.* **32**, 549 (2005).
- M Hasnah, C Parham, E Pisano, Z Zhong, O Oltulu, D Chapman. Mass Density Images from the Diffraction Enhanced Imaging Technique. *Phys. Med. Biol.* **32**, 549-552 (2005).
- G Jacobs, S Ricote, P Patterson, U Graham, A Dozier, S Khalid, E Rhodus, B Davis. Low Temperature Water-Gas Shift: Examining the Efficiency of Au as a Promoter for Ceria-Based Catalysts Prepared by CVD of a Au Precursor. *Appl. Catal. A.* **292**, 229-243 (2005).
- T Kajander, A Cortajarena, E Main, S Mochrie, L Regan. A New Folding Paradigm for Repeat Proteins. *J. Am. Chem. Soc.* **127**, 10188-10190 (2005).
- H Kim, C Detavernier, O van der Statten, S Rosnagel, A Kellock, D Park. Robust Ta<sub>Nx</sub> Diffusion Barrier for Cu-Interconnect Technology with Subnanometer Thickness by Metal-Organic Plasma-Enhanced Atomic Layer Deposition. *J. Appl. Phys.* **98**, 014308 (2005).
- S Kramer, J Bengtsson. Dynamic Aperture Optimization for Low Emittance Light Sources. *Proceedings of the 2005 Particle Accelerator Conference, Knoxville Tennessee*, Vol , p. 3378-3380, sponsored by IEEE. (2005).
- S Krinsky. Transverse Impedance of a Smooth Flat Taper. *Phys. Rev. ST AB.* **8**, 124403 (2005).
- S Kwak, E DiMasi, Y Han, J Aizenberg, I Kuzmenko. Orientation and Mg Incorporation of Calcite Grown on Functionalized Self-Assembled Monolayers: A Synchrotron X-ray Study. *Cryst. Growth Des.* **5** (6), 2139-2145 (2005).
- J Li, J Williams, Z Zhong, K Kuettner, M Aurich, J Mollenhauer, C Muehleman. Reliability of Diffraction Enhanced Imaging for Assessment of Cartilage Lesions, Ex Vivo. *Osteoarthr. Cartilage.* **13**, 187-197 (2005).
- A Lindenberg, J Larsson, K Sokolowski-Tinten, K Gaffney, G MacPhee, D Weinstein, D Lowney, T Allison, T Matthews, et al.. Atomic-Scale Visualization of Inertial Dynamics. *Science.* **308**, 392 (2005).
- R Lobo, J LaVeigne, D Reitze, D Tanner, Z Barber, E Jacques, P Bosland, M Burns, G Carr. Photoinduced Time-Resolved Electrodynamics of Superconducting Metals and Alloys. *Phys. Rev. B.* **72**, 024510 (2005).
- J Lu, G Rozgonyi, A Schonecker, A Gutjahr, Z Liu. Impact of Oxygen on Carbon Precipitation in Polycrystalline Ribbon Silicon. *J. Appl. Phys.* **97**, 033509 (2005).
- C Marrows, P Steadman, A Hampson, L Michez, B Hickey, N Telling, D Arena, J Dvorak, S Langridge. Probing Magnetic Ordering in Multilayers using Soft X-ray Resonant Magnetic Scattering. *Phys. Rev. B: Condens. Matter.* **72**, 024421 (2005).
- L Michez, C Marrows, P Steadman, B Hickey, D Arena, J Dvorak, H Zhang, D Bucknall, S Langridge. Resonant X-ray Scattering from a Magnetic Multilayer Reflection Grating. *Appl. Phys. Lett.* **86**, 112502 (2005).
- L Miller, R Smith. Synchrotrons Versus Globars, Point-Detectors Versus Focal Plane Arrays: Selecting the Best Source and Detector for Specific Infrared Microspectroscopy and Imaging

- Applications. *Vib. Spectrosc.* **38** (1-2), 237-240 (2005).
- L Miller, M Ruppel, C Ott, R Smith, A Lanzirrotti. Development and Applications of an Epifluorescence Module for Synchrotron -ray Fluorescence Imaging. *Rev. Sci. Instrum.* **76**, 066107 (2005).
- L Miller. National Synchrotron Light Source Activity Report 2004. Government Printing Office, Washington. Prepared for BNL-NSLS. (2005).
- C Muehleman, J Li, K Kuettner, Z Zhong. Diffraction Enhanced X-ray Imaging of Musculoskeletal Lesions. *Osteoarthr. Cartilage*. **12**, s117-s117 (2005).
- G Ozaydin, A Ozcan, Y Wang, K Ludwig, H Zhou, R Headrick, D Siddons. Real-Time X-ray Studies of Mo-Seeded Self-Organized Si Nanodot Formation During Low Energy Ar<sup>+</sup> Ion Bombardment. *Appl. Phys. Lett.* **87**, 163104 (2005).
- N Roberts, S Jaradat, L Hirst, Y Wang, S Wang, Z Liu, C Huang, J Bai, R Pinidak, H Gleeson. Biaxiality and Temperature Dependence of 3- and 4-layer Intermediate Smectic Phase Structures as Revealed by resonant X-ray Scattering. *Europhys. Lett.* **72** (6), 976-982 (2005).
- F Sakamoto, H Iijima, K Dobashi, T Imai, T Ueda, T Watanabe, M Uesaka. Emittance and Energy Measurements of Low-Energy Electron Beam Using Optical Transition Radiation Techniques. *Jpn. J. Appl. Phys., Part 1*. **44** (3), 1485-1491 (2005).
- A Serganov, S Keiper, L Malinina, V Tereshko, E Skripkin, C Hobartnet, A Polonskaia, Z Dauter, A Jaschke, D Patel. Structural basis for Diels-Alder ribozyme-catalyzed carbon-carbon bond formation. *Nat. Struct. Mol. Biol.* **12** (3), 218-224 (2005).
- T Shin, M Ree. In Situ Infrared Spectroscopy Study on Imidization Reaction and Imidization-Induced Refractive Index and Thickness Variations in Microscale Thin Films of a Poly(amic ester). *Langmuir*. **21**, 6081-6085 (2005).
- P Smith, I Koch, R Gordon, D Mandoli, B Chapman, K Reimer. X-ray Absorption Near-Edge Structure Analysis of Arsenic Species for Application to Biological Environmental Samples. *Environ. Sci. Tech.* **39**, 248-254 (2005).
- S Stadler, D Minott, D Harley, J Craig, M Khan, I Dubenko, N Ali, K Story, J Dvorak, et al.. Element-Specific Magnetic Properties of Co<sub>2</sub>MnSi Thin Films. *J. Appl. Phys.* **97**, 10C302 (2005).
- M Teng, Z Zhong. Use of Diffraction Enhanced Imaging to Determine the X-ray Refractive Indices of Various Tissues at Biologically-Relevant Energies. *The J. of Young Investigators*. **12**, online (2005).
- A Vahedi-Faridi, V Stojanoff, J Yeh. The Effects of Flash-Annealing on Glycerol Kinase Crystals. *Acta Cryst. D*. **61** (7), 982-989 (2005).
- E Vescovo, H Kim, J Ablett, S Chambers. Spin-polarized Conduction in Localized Ferromagnetic Materials: The Case of Fe<sub>3</sub>O<sub>4</sub> on MgO(100). *J. Appl. Phys.* **98**, 084507 (2005).
- A Wagner, M Aurich, N Sieber, M Stoessel, W Wetzels, K Schmuck, M Lohmann, B Reime, J Metge, et al.. Options and Limitations of Joint cartilage Imaging: DEI in Comparison to MRI and Sonography. *Nucl. Instrum. Meth. A*. **548**, 47-53 (2005).
- Q Wang, A Kretlow, M Beekes, D Naumann, L Miller. In Situ Characterization of Prion Protein Structure and Metal Accumulation in Scrapie-Infected Cells by Synchrotron Infrared and X-ray Imaging. *Vib. Spectrosc.* **38**, 61-69 (2005).
- Q Wang, W Sanad, L Miller, A Voigt, K Klingel, R Kandolf, K Stangl, G Baumann. Infrared Imaging of Compositional Changes in Inflammatory Cardiomyopathy. *Vib. Spectrosc.* **38**, 217-222 (2005).
- M Wernick, L Chapman, O Oltulu, Z Zhong. Imaging Method Based on Attenuation, Refraction and Ultra-small-angle-scattering of X-rays. US Patent No. US 6,947,521 B2. (2005).
- M Wernick, J Brankov, D Chapman, Y Yang, E Pisano, C Parham, C Muehleman, Z Zhong, M Anastasio. Physical Model of Image formation in Multiple-Image Radiography. *SPIE: Developments in X-ray Tomography IV*, Vol 5535, p. 369-379, sponsored by SPIE. (2005).
- B Wood, K Bamberg, L Miller, M Quinn, L Chiriboga, M Diem, D McNaughton. Infrared Imaging of Normal and Diseased Cervical Tissue Sections. *Biomedical Applications of Micro- and Nanoengineering II*, Vol 5651, p. 78-84, sponsored by SPIE--The International Society for Optical Engineering. (2005).
- H Yang, T Shin, L Yang, K Cho, C Ryu, Z Bao. Effect of Mesoscale Crystalline Structure on the Field-Effect Mobility of Regioregular Poly(3-hexyl thiophene) in Thin-Film Transistors. *Adv. Func. Mater.* **15** (4), 671-676 (2005).
- L Yang, M Fukuto. Modulated Phase of Phospholipids with a Two-Dimensional Square Lattice. *Phys. Rev. E*. **72**, 010901(R) (2005).
- H Yang, T Shin, M Ling, K Cho, C Ryu, Z Bao. Conducting AFM and 2D GIXD Studies on Pentacene Thin Films. *J. Am. Chem. Soc.* **127**, 11542-11543 (2005).
- A Yang, Z Chen, X Zuo, D Arena, J Kirkland, C Vittoria, V Harris. Cation-Disorder-Enhanced Magnetization in Pulsed-Laser-Deposited CuFe<sub>2</sub>O<sub>4</sub> Films. *Appl. Phys. Lett.* **86**, 252510 (2005).
- T Yuasa, H Sugiyama, Z Zhong, A Maksimenko, F Dilmanian, T Akatsuka, M Ando. High-Pass-Filtered Diffraction Microtomography by Coherent Hard X rays for Cell Imaging: Theoretical and Numerical Studies of the Imaging and Reconstruction Principles. *J. Opt. Soc. Am. A*. **22** (12), 2622-2634 (2005).
- I Zegkinoglou, J Stempfer, C Nelson, P Hill, J Chakhalian, C Bernhard, J Lang, G Srajer, H Fukazawa, et al.. Orbital Ordering Transition in Ca<sub>2</sub>Ru<sub>4</sub> Observed with Resonant X-ray Diffraction. *Phys. Rev. Lett.* **95**, 136401 (2005).
- Z Zhu, T Andelman, M Yin, T Chen, S Ehrlich, S O'Brien, R Osgood, Jr.. Synchrotron X-ray Scattering of ZnO Nanorods: Periodic Ordering and Lattice Size. *J. Mater. Res.* **20** (4), 1033 (2005).